

Elettariopsis chayaniana (Zingiberaceae) , a New Species from Eastern Thailand

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Abstract: A new species of *Elettariopsis* from eastern Thailand, *E. chayaniana*, is described and illustrated . Key to all species currently enumerated for Thailand is also provided .

Key words: *Elettariopsis chayaniana*; New species; Thailand

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The Zingiberaceae is one of the important medicinal families in Thailand . Taxonomic studies on this plant group are essential to set up the baseline information for other related research, especially in drug development . Some genera, including the genus *Elettariopsis* Baker, are not well studied .

The genus *Elettariopsis* Baker is a small genus in the family Zingiberaceae with 8 - 15 taxa, mainly distributed in southeast Asia (Mabberley, 1993) . Members of the genus can be distinguished from other genera by their fewer leaves (usually 1 - 5), loosely clasping or forming distinct pseudostem, and separated flowering shoots, either with clustered flowers in a cincinnus or with single flowers along a decurrent scape (Holtum, 1950; Kam, 1982; Lim, 2003) . However flowers of all recognized taxa are essentially similar in coloration and forms, and resemble some *Amomum* species, eg . *A. testaceum* Ridl ., *A. biflorum* Jack, *A. uliginosum* Koenig (Holtum, 1950; Lim, 2003; Pichansoonthon and Yupparach, 2007) .

Recently, five species, *E. elan* C . K . Lim, *E. exserta* (Scort .) Bak ., *E. slahmong* C . K . Lim, *E. smithiae* Y . K . Kam, and *E. triloba* (Gagnep .) Loes ., are enumerated for Thailand and their taxonomic history, including information on ethnobotany, chemical constituents, and biological activities of some members the genus were discussed (Pichansoonthon and Yupparach, 2007) . In this paper, a new species, *E. chayaniana*, is described and illustrated in this paper .

***Elettariopsis chayaniana* Yupparach, sp . nov .**
Fig . 1 - 5

Type: *Pichansoonthon* 521, Khao Tung Sapan Hin, Amphoe Khlung, Changwat Chantaburi, Thailand, N 12°45.033', E 102°22.549', elevation 143 - 561 m, 11 February 2004,

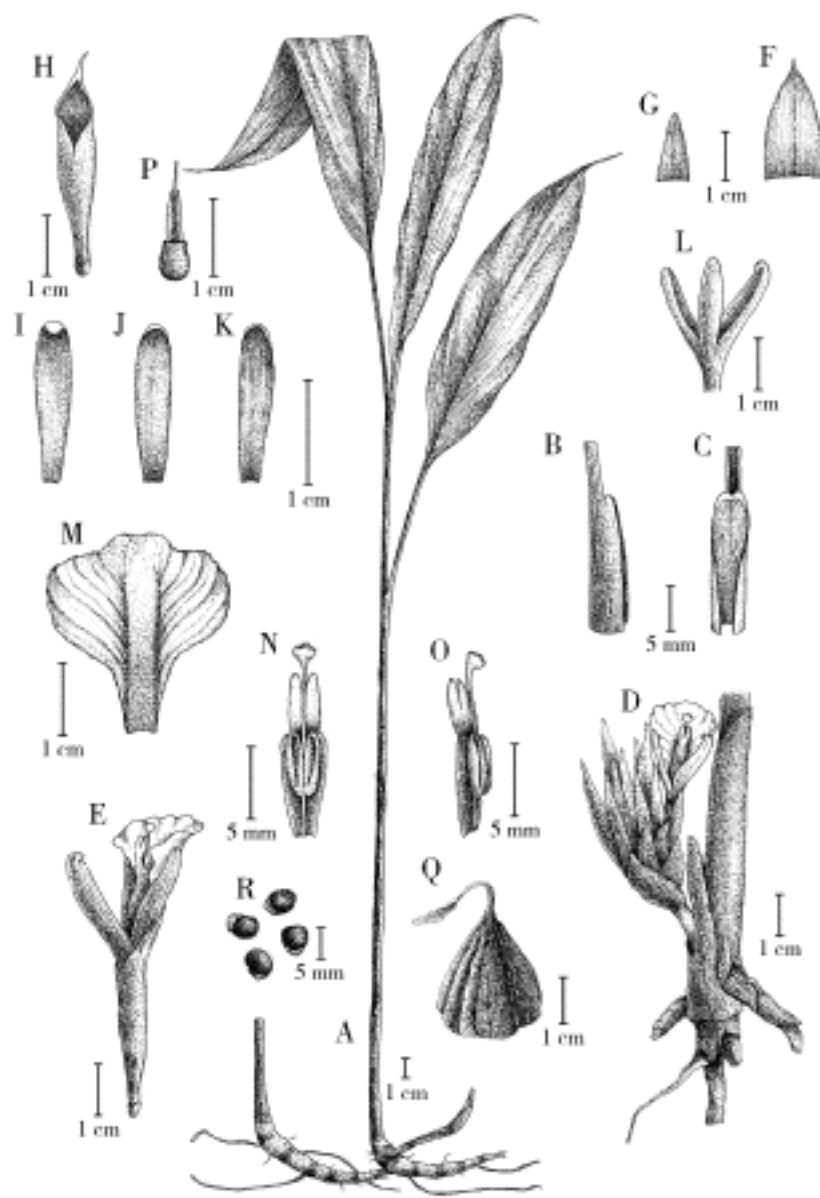


Fig . 1 *Elettariopsis chayaniana* Yupparach

A . plant showing habit, roots, rhizomes, pseudostem, and leaves; B . part of a leaf, showing a ligule (side view); C . part of a leaf, showing a ligule (front view); D . an inflorescence; E . a flower; F . bract; G . bracteole; H . calyx tube; I . dorsal corolla lobe; J . & K . lateral corolla lobes; L . part of a corolla tube and corolla lobes; M . labellum; N . anther and anther crest, style and stigma (front view); O . anther and anther crest, style and stigma (side view); P . Ovary with stylodial glands and lower part of the style; Q . fruit; and R . seeds (drawn by Chalemchoke Boonchit)



Fig . 2 *E. chayaniana* in type location (Photo: Vit-ya Karndee)



Fig . 3 *E. chayaniana*, an inflorescent and flowers in detail



Fig . 4 *E. chayaniana*, showing labellum, stigma and style, anther crest, and dorsal corolla lobe



Fig . 5 *E. chayaniana*, showing an ovate reddish fruit with longitudinal ridges

(BKF holotype including dried and spirit materials; KEP and SING paratype) .

Diagnosis: *E. smithiae* similis, sed ligula longiore usque ad 2 - 4 mm longis (nec 1 - 2 mm), foliis 2 - 4 oblanceolatis, basi obliquis, petiolis 3 - 9 cm longis, inflorescentia capitata, calycis tubo quam corollae tubo longiore, connectivi appendice ligulata apice bilobata, fructu ovato cristis longitudinalibus 7 differt .

Description: Perennial herb . Rhizome creeping, slender, bearing pseudostem at intervals . Pseudostem slender, 26.2 - 52.3 cm . Bladeless leaves 2 - 3 . Normal leaves 2 - 4; ligule glabrous, 2 - 4 mm long, apex 2-lobed; petiole 2.6 - 11.8 cm, glabrous, channeled; leaf blades lanceolate-oblong, or elliptic, 14.5 - 28.5 by 5.1 - 7.0 cm, base obliquely acute, apex acuminate to shortly caudate, margin entire to slightly undulate, both

sides glabrous. Inflorescence arising from base of pseudostems, with flowers in an erect dense head, peduncle 0.9 - 2.5 cm long. Bracts 5 - 6, ovate, light brownish, 1.0 - 2.5 cm by 6 - 8 mm. Bracteole lanceolate, 1.5 - 2.1 by 0.4 - 1.0 cm. Calyx greenish, tubular, 2.6 - 3.0 cm long. Corolla tube pinkish, slender, shorter than calyx, 2.1 - 2.5 cm long; lobes 3, greenish; dorsal lobe oblong, 1.6 - 1.8 cm by 5 - 6 mm, hooded, greenish; lateral lobes greenish, oblong, 1.6 - 2.7 cm by 5 - 6 mm, slightly hooded. Lateral staminodes absent. Labellum white with reddish base and yellow middle, suborbicular, 1.7 - 2.2 by 1.5 - 1.7 cm; base clawed, 6 - 8 mm distal part 3-lobed, median lobe crenate and sometimes slightly emarginate. Filament red c. 5 - 6 by 2 - 3 mm. Anther c. 4 by 2 mm; connective appendage linear, 5 - 6 by 1 - 2 mm, lower half red, upper half white, apex 2-lobed. Ovary c. 2 by 2 mm, glabrous, inconspicuously 8-angled; stylodes 2, slender, 3 - 4 by 1 - 2 mm. Fruit capsule, ovate, c. 2.8 by 1.5 cm, pinkish brown, with seven longitudinal ridges. Seeds numerous, elliptic-globose, 4 - 5 mm.

Distribution: Found in Khao Sapan Hin Range of Amphoe Khlung, Changwat Chantaburi, Thailand. So far, only known from the type locality.

Ecology: It grows under the shade of dried evergreen forest at the altitude of 140 - 560 m.

Vernacular names: Wan Kambang

Use: Medicinal

Ethymology: The specific epithet of this new species is named in honor of Dr. Chayan Picheansoonthon in recognition of his contribution to our knowledge of the family Zingiberaceae in Thailand.

Note: It belongs to the same group of *E. elan*, *E. slahmong* and *E. triloba* with a clustered-head inflorescences, while others taxa in Thailand are with an elongated scape. *Elettariopsis chayaniana* can be readily distinguished by its unique bilobed anther crest (linear with a bilobed apex) and fruits (ovate with seven longitudinal ridges).

The scent of the leaves is one of the useful means of species differentiations in *Elettariopsis*. Crushed leaves of *E. elan* gives a geranium sweet smell, while *E. slahmong* yields a distinctive "stinging bug" odour. However, *E. triloba* releases hardly discernible scent. *Elettariopsis chayaniana* gives distinctive smell different from those three taxa. Analyses on essential oils of Thai *Elettariopsis* species and molecular phylogenetic study on members of the genus found in Thailand and Malay Peninsula are under way.

Other specimens studied: PY-CP 0021 (same location,

24 February 2006), PY-CP 0022, 24 February 2006)

Key to species of the *Elettariopsis* Baker in Thailand

1. Scape with flowers in a dense head 2
Scape with flowers spaced along a decurrent rachis 5
2. Leaves prominently veined *E. slahmong*
Leaves not prominently veined 3
3. Anther crest more or less quadrate with a small tooth-like lobe at the base on each side *E. triloba*
Anther crest otherwise 4
4. Leaf base attenuate *E. elan*
Leaf base obliquely acute *E. chayaniana*
5. Leaves 3 - 5 (- 6), lanceolate, glabrous and shiny *E. smithiae*
Leaves (1 -) 2 - 3, elliptic, coriaceous and dull, strongly plicate *E. exserta*

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